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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,650	12/16/2003	Nobushige Korenaga	00862.023385	3534

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EXAMINER

WAKS, JOSEPH

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 04/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary

Application No.

10/735,650

Applicant(s)

KORENAGA, NOBUSHIGE

Examiner

Joseph Waks

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 13-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-4, 6, 7 and 9-12 is/are rejected.
- 7) ☒ Claim(s) 5 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0204,0404,0904,120</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 1-12 in the reply filed on February 25, 2005 is acknowledged. The traversal is on the ground(s) that the inventions of Group I, II and III are so closely related in the field of alignment and exposure using movable elements, stator coils and current controllers, that a proper search of any of the claims would, of necessity, require a search of the others. This is not found persuasive because the search of exposure apparatus holding first and second wafers, the steps of applying a photosensitive agent to a substrate, exposing the substrate by an exposure apparatus and developing the substrate require a separate search and skills and as such have acquired a separate status in the art.

The requirement is still deemed proper and is therefore made FINAL.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3. Figures 24 and 25 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the

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applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claim 7 is objected to because of the following informalities: in line 2, "movabl" should be --movable--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Markle (US 5,886,432).

Markle discloses invention as claimed: an alignment apparatus generating a driving force between a movable element 600 and a stator 610 facing the movable element including movable element magnets 604-1 through 604-8 arrayed in a plate-like plane of the movable element in accordance with an array cycle and magnetized in predetermined directions, stator coils 606, 608 arrayed at intervals corresponding to the array cycle, and a current controller supplying control currents having phase differences to each pair of adjacent ones of said stator coils to generate a driving force for driving

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the movable element between the movable element magnets and the stator coils facing the movable element magnets (see column 4, lines 30-67 and column 5, lines 1-6).

Re claim 6, Markle discloses in Figure 5 the array of movable element magnets 504-1 through 504-4 including a plurality of defective portions that have no magnets (see spaces between the magnet rows).

7. Claims 1, 7, 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Takita et al. (US 6,147,421).

Takita et al. disclose invention as claimed: an alignment apparatus 100 generating a driving force between a movable element 110, 130, and a stator 150 facing the movable element including movable element magnets arrayed in a plate-like plane of the movable element in accordance with an array cycle and magnetized in

predetermined directions, stator coils arrayed at intervals corresponding to the array cycle, a current controller supplying control currents having phase differences to each pair of adjacent ones of said stator coils to generate a driving force for driving the movable element between the movable element magnets and the stator coils facing the movable element magnets (see column 6, lines 55-65), and a plurality of projecting regions 540, 542, 544 and 546 externally projecting from the first region (see Figure 5).

8. Claims 1 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Markle (US 5,886,432).

Markle discloses invention as claimed: an alignment apparatus generating a driving force between a movable element 600 and a stator 610 facing the movable element including movable element magnets 604-1 through 604-8 arrayed in a plate-like

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plane of the movable element in accordance with an array cycle and magnetized in predetermined directions, stator coils 606, 608 arrayed at intervals corresponding to the array cycle, and a current controller supplying control currents having phase differences to each pair of adjacent ones of said stator coils to generate a driving force for driving the movable element between the movable element magnets and the stator coils facing the movable element magnets (see column 4, lines 30-67 and column 5, lines 1-6).

Re claim 12, Markle discloses in column 15 cooling the plate 610 and then by conduction the coils 500 and 502.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Markle (US 5,886,432) in view of Tanaka (US 6,339,266).

Markle discloses the apparatus essentially as claimed. However, Markle does not disclose the first partition structure which covers the stator coils and in which a coolant for cooling the stator coils can circulate.

Tanaka discloses in Figures 13-15B the alignment apparatus including a partition structure 46 covering the stator 38 for the purpose of circulating the cooling medium.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the apparatus as taught by Markle and to provide the partition structure as taught by Tanaka for the purpose of circulating the cooling medium.

Allowable Subject Matter

11. Claims 5 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Re claim 5, the feature of the stator coils formed by stacking three pairs of the first and second layers generating transitional driving forces with three degrees of freedom and rotational driving forces with three degrees of freedom between the movable element magnets and the stator coils, in combination with the other limitations present, are neither disclosed nor taught by the prior art of record.

Re claim 8, the feature of the projecting or defective regions being arranged at positions linearly asymmetric with respect to the central portion of the first region, in combination with the other limitations present, are neither disclosed nor taught by the prior art of record.

Prior Art

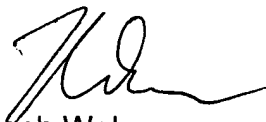
12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Waks whose telephone number is (571) 272-2037. The examiner can normally be reached on Monday through Thursday 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren E. Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Joseph Waks
Primary Examiner
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4/6/05